


DESIGN MEMORANDUM NO. 4-06

TO: Chief District Engineers  
Design Engineers  
Active Consultants

FROM: David E. Kratt, Director   
Division of Highway Design

DATE: December 4, 2006

SUBJECT: ADA Compliance on Sidewalks, Curb Ramps, and Driveway Access

Three Standard Drawings (ERPM150, ERPM152, & ERPM170) have been modified to strengthen their compliance with the Federal Americans with Disabilities Act (ADA) and *Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities* (ADAAG). Sidewalks, curb ramps, and driveway access shall be designed, constructed, operated and maintained so that all pedestrians, including people with disabilities, can travel safely and independently.

In general, whenever the roadside and land development conditions are such that pedestrians regularly move along a highway, those pedestrians should be furnished with a sidewalk or walkway, as is suitable to the conditions.

Sidewalks should be built to accommodate all pedestrians and should be as flat as practical. The minimum width of a sidewalk should be 5'. Sidewalks should be held to a running grade of 5 percent or less, if possible. However, sidewalks that follow the grade of a street in hilly terrain cannot meet this requirement and may follow the grade of the street. The maximum sidewalk cross slope is 2 percent to minimize travel effort for wheelchair users and still provide drainage.

Curb ramps are required at all pedestrian crossings, including midblock crossings as well as at intersections. When locating curb ramps, designers must consider the position of drainage facilities and utilities such as power poles, fire hydrants, street lights, and traffic signals. Ramps shall have level landings (4 foot square minimum) at bottom and top of each ramp.

Where a driveway crosses a sidewalk, the driveway must conform in width, cross slope, and grade to the design requirements for sidewalks in order to maintain accessibility for pedestrians with disabilities. At least 4 ft of flat sidewalk area is required at the top of a sloped driveway to accommodate wheelchair use. In some cases, it may be necessary to bend the sidewalk around the back of the driveway to achieve a level surface of 4 ft. See the Standard Drawing for details.

These Standard Drawing will be in affect with the January, 2007 letting.

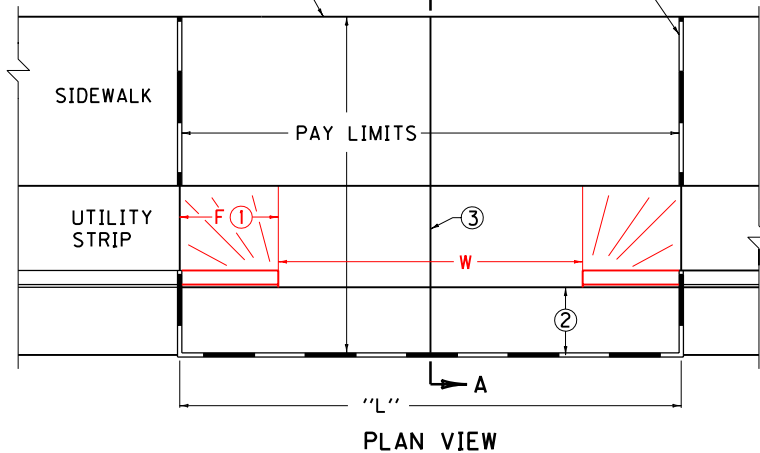
Any questions regarding this memorandum should be directed to this office.

DEK:JDJ:CW

Attachments

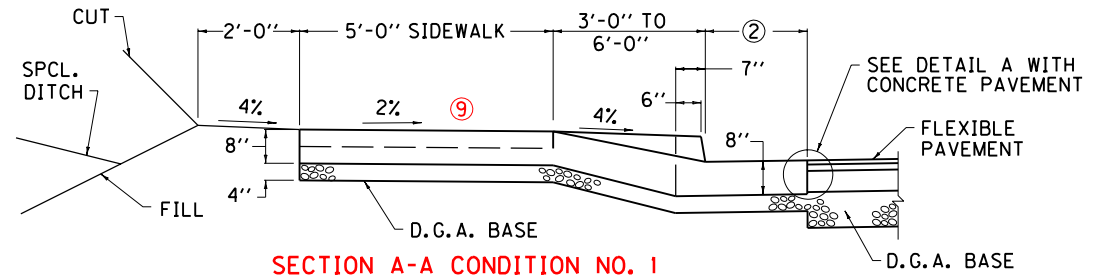
EXP. JOINT REQUIRED WHEN ABUTTING  
ANOTHER RIGID STRUCTURE

1/2" EXPANSION  
JOINT MATL.

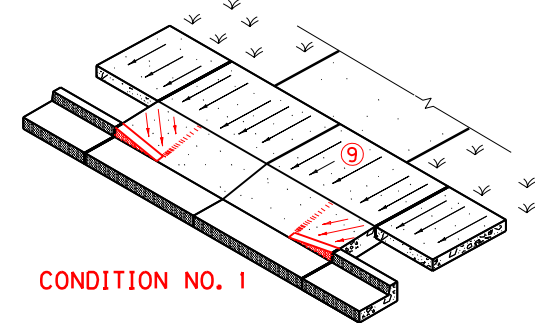


~ NOTES ~

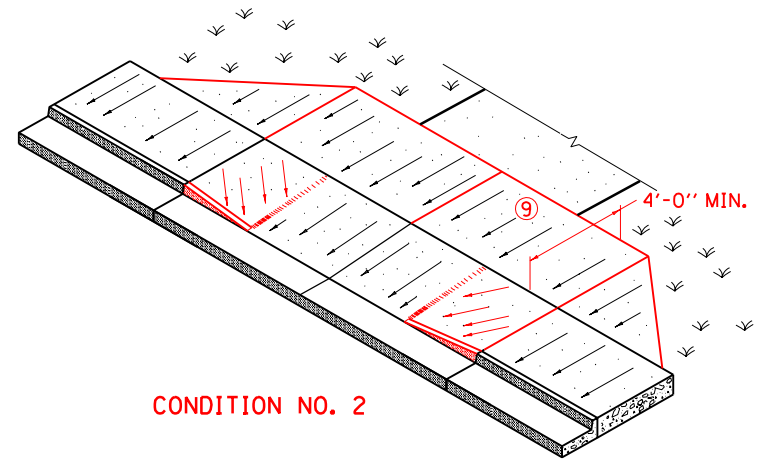
- ① FOR WIDTH W AND F:  
RESIDENTIAL - MINIMUM W = 12'-0", MAXIMUM W = 24'-0"; MINIMUM F = 2'-6", MAXIMUM F = 10'-0"  
COMMERCIAL - MINIMUM W = 24'-0", MAXIMUM W = 36'-0"; F = 10'-0"  
WHEN MORE THAN 2 LANES ARE REQUIRED, 36'-0" WIDTH MAY BE INCREASED TO RELIEVE  
INTERFERENCE BETWEEN ENTERING AND EXITING TRAFFIC.  
RADIAL RETURNS SHALL BE USED ON ENTRANCES IN THE FOLLOWING CASES:  
a. ON DRIVEWAYS EXPECTING TO CARRY MORE THAN 600 TRIPS PER DAY.  
b. WHEN ENTRANCE WIDTH IS GREATER THAN 36'.  
c. WHEN THE HIGHWAY HAS A POSTED OR OPERATING SPEED OVER 45 MPH.  
d. ON A RURAL SECTION WHERE A FLUSH SHOULDER EXISTS.  
e. WHERE AN EXCLUSIVE RIGHT TURN LANE IS USED.
- ② 1'-0" OR 2'-0" WITH CONCRETE PAVEMENT, 2'-0" WITH FLEXIBLE PAVEMENT
- ③ WHEN "L" DIMENSION IS GREATER THAN 15'-0" A SAWED AND SEALED JOINT, 1 1/2" DEEP  
AND 1/4" WIDE SHALL BE PLACED AT THE CENTER OF THE "L" DIMENSION. WIDE ENTRANCES  
REQUIRE ADDITIONAL JOINTS, SPACING SHALL NOT EXCEED 15'-0" O.C.
4. CLASS "A" CONCRETE OR JOINTED PLAIN CONCRETE PAVEMENT SHALL BE USED  
IN THE ENTRANCE PAVEMENT.
5. THE ENTRANCE PAVEMENT SHALL RECEIVE A BROOM FINISH AND SHALL BE CURED THE  
SAME AS THE MAINLINE PAVEMENT AND/OR SIDEWALK.
6. THE CONTRACT UNIT PRICE BID PER SQUARE YARD FOR "CONC. ENT. PAVEMENT-  
8 INCH (CODE NO. 2101)" SHALL INCLUDE CLASS "A" CONCRETE AND ALL INCIDENTALS  
NECESSARY TO COMPLETE THE WORK. D.G.A. SHALL BE A SEPARATE BID ITEM.
7. USE CONDITION NO. 3 WHEN NO UTILITY STRIP IS PROVIDED, AND INCORPORATE  
FEATURES OF OTHER DESIGNS SHOWN WHERE NOT IN CONFLICT.
8. PROVIDING THAT ADA GUIDELINES SHOWN IN NOTES ⑨ AND 10 ARE FOLLOWED, THE  
ENGINEER MAY MODIFY THE DESIGN TO BETTER FIT EXISTING CONDITIONS.
- ⑨ 2% CROSS SLOPE MAXIMUM ON SIDEWALK. IF CONDITIONS WARRANT, SIDEWALK MAY  
BE SLOPED 2% AWAY FROM ROADWAY.
10. SIDEWALKS SHOULD BE DESIGNED WITH A MAX. GRADE OF FIVE PERCENT. WHERE A  
SIDEWALK RUNS ALONG A STEEP ROADWAY, THE SIDEWALK GRADE MAY EXCEED FIVE  
PERCENT IF IT FOLLOWS THE GRADE OF THE ROADWAY.
- ⑪ ANY DRIVEWAY 24' OR GREATER REQUIRES ADA SIDEWALK TREATMENTS WITH DETECTABLE  
WARNINGS WHICH WILL BE INCIDENTAL TO THE ENTRANCE CONSTRUCTION.



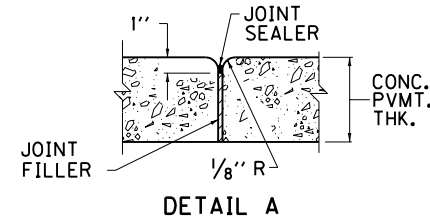
SECTION A-A CONDITION NO. 1



CONDITION NO. 1



CONDITION NO. 2



DETAIL A

COUNTY OF		ITEM NO.	SHEET NO.
KENTUCKY DEPARTMENT OF HIGHWAYS			
CONCRETE ENTRANCE PAVEMENT AND SIDEWALK			
APPROVED		12-07-06	DATE
BY			
KENTUCKY DEPARTMENT OF HIGHWAYS DESIGN			

EXP. JOINT REQUIRED WHEN ABUTTING  
ANOTHER RIGID STRUCTURE

SIDEWALK

1/2" EXPANSION  
JOINT MATL.

PAY LIMITS

UTILITY  
STRIP

PLAN VIEW

- ① FOR WIDTH W AND F:  
RESIDENTIAL - MINIMUM W = 12'-0", MAXIMUM W = 24'-0"  
MINIMUM F = 2'-6", MAXIMUM F = 10'-0"  
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- ON DRIVEWAYS EXPECTING TO CARRY MORE THAN 600 TRIPS PER DAY.
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- WHERE AN EXCLUSIVE RIGHT TURN LANE IS USED.

- ② 1'-0" OR 2'-0" WITH CONCRETE PAVEMENT, 2'-0" WITH FLEXIBLE PAVEMENT.

- ③ WHEN "L" DIMENSION IS GREATER THAN 15'-0" A SAWED AND SEALED JOINT, 1/2" DEEP  
AND 1/4" WIDE SHALL BE PLACED AT THE CENTER OF THE "L" DIMENSION. WIDE  
ENTRANCES REQUIRE ADDITIONAL JOINTS, SPACING SHALL NOT EXCEED 15'-0" O.C.

4. CLASS "A" CONCRETE OR JOINTED PLAIN CONCRETE PAVEMENT SHALL BE USED  
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5. THE ENTRANCE PAVEMENT SHALL RECEIVE A BROOM FINISH AND SHALL BE CURED THE  
SAME AS THE MAINLINE PAVEMENT AND/OR SIDEWALK.

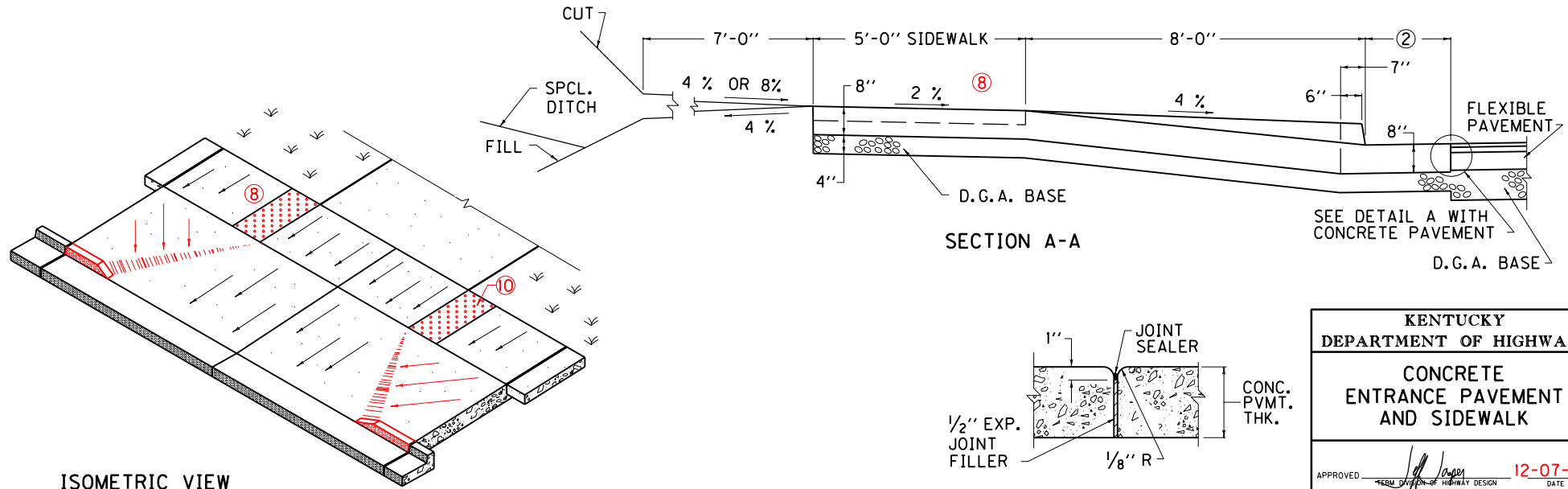
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NECESSARY TO COMPLETE THE WORK. D.G.A. SHALL BE A SEPARATE BID ITEM.

7. PROVIDING THAT ADA GUIDELINES SHOWN IN NOTE ⑧ AND 9 ARE FOLLOWED, THE  
ENGINEER MAY MODIFY THE DESIGN TO BETTER FIT EXISTING CONDITIONS.

- ⑧ 2% CROSS SLOPE MAXIMUM ON SIDEWALK.

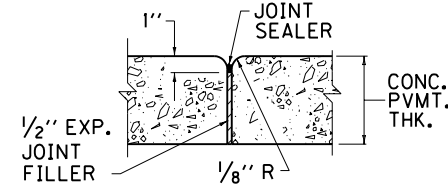
9. SIDEWALKS SHOULD BE DESIGNED WITH A MAX. GRADE OF FIVE PERCENT. WHERE A  
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PERCENT IF IT FOLLOWS THE GRADE OF THE ROADWAY.

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SECTION A-A

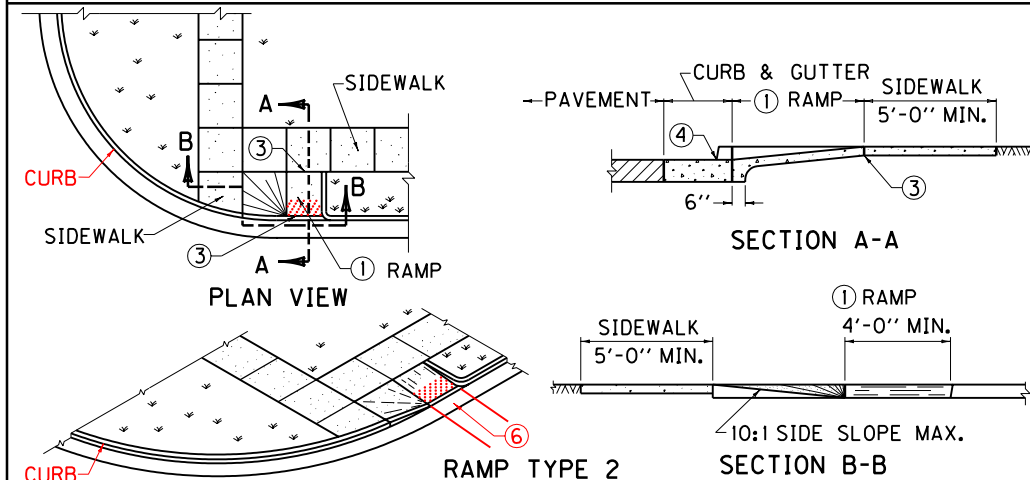
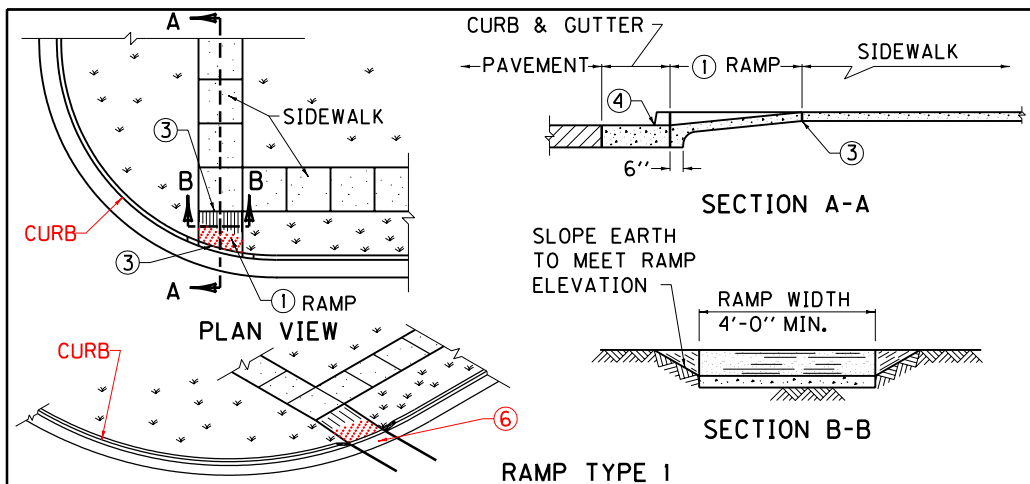
FLEXIBLE  
PAVEMENT  
D.G.A. BASE  
SEE DETAIL A WITH  
CONCRETE PAVEMENT



DETAIL A

KENTUCKY  
DEPARTMENT OF HIGHWAYS  
CONCRETE  
ENTRANCE PAVEMENT  
AND SIDEWALK

APPROVED *[Signature]* 12-07-06  
KENTUCKY DEPARTMENT OF HIGHWAYS DESIGN DATE



#### NOTES

RAMPS SHALL BE PAID PER SQ. YARD OF 4" CONC. SIDEWALK AND THE UNIT PRICE SHALL INCLUDE ALL MATERIALS, FORMS, CURB BEHIND RAMP AND LANDING, AND INCIDENTALS NECESSARY FOR CONSTRUCTION.

THE RAMP SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE. A BROOM FINISH OR EQUAL NON-SKID FINISH IS REQUIRED. DETECTABLE WARNINGS SHALL BE INCIDENTAL TO SIDEWALK CONSTRUCTION.

THE NORMAL GUTTER LINE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.

RAMPS SHOULD BE LOCATED WITHIN MARKED LIMITS OF CROSSWALKS.

USE RAMP TYPE 3 WHEN POINT A TO B IS LESS THAN 20 FEET.

USE RAMP TYPE 4 WHEN POINT A TO B IS 20 FEET OR MORE.

① CURB RAMP GRADE SHALL NOT EXCEED 12:1, CROSS SLOPE SHALL NOT EXCEED 2%

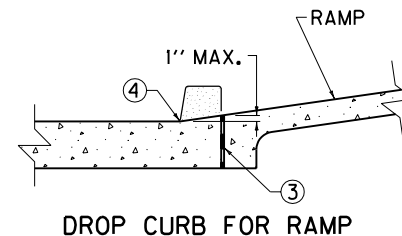
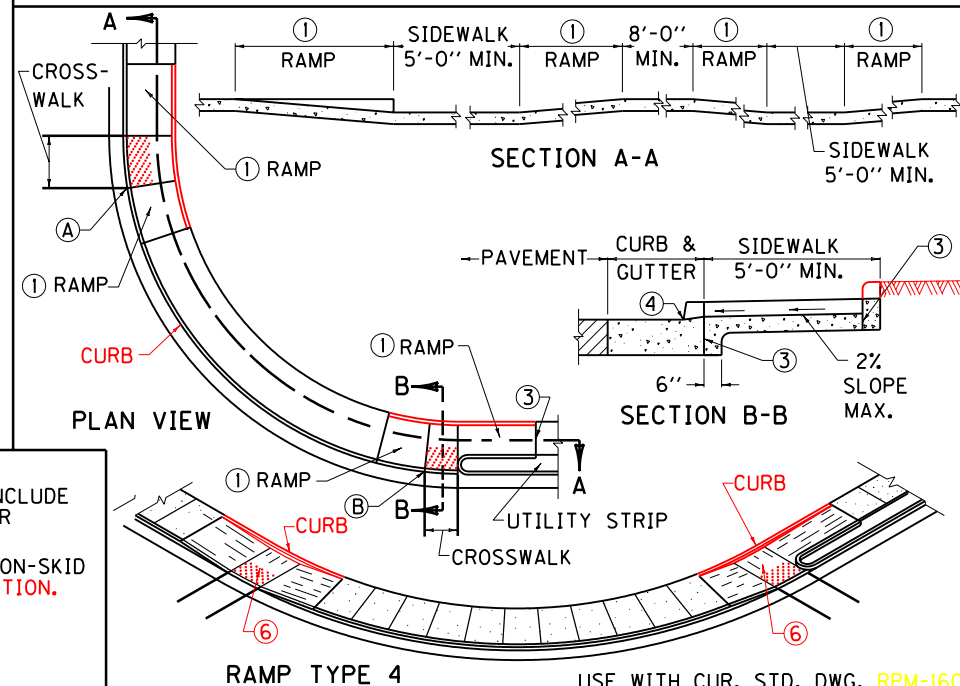
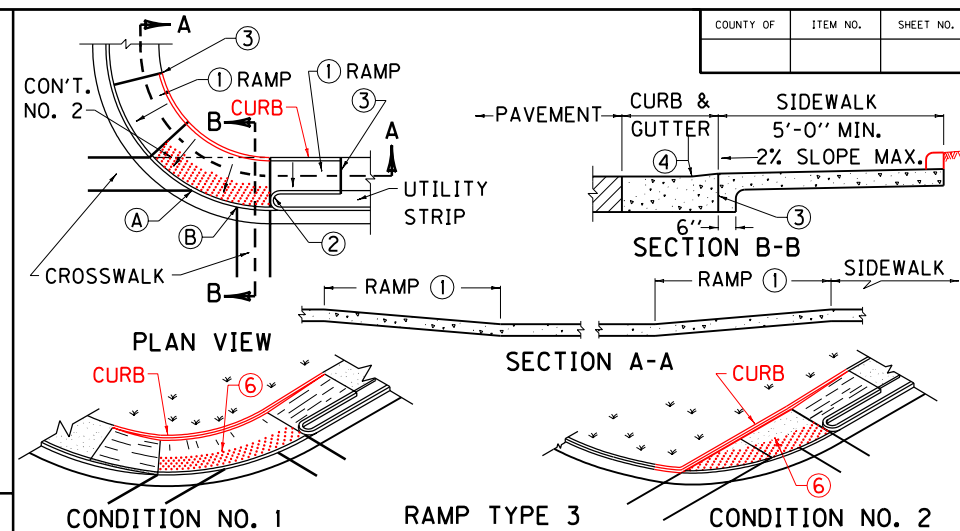
② CURB RETURN REQUIRED WHEN UTILITY STRIP IS 4 FEET OR GREATER. FOR UTILITY STRIPS LESS THAN 4 FEET, THE AREA IS TO BE SURFACED WITH SIDEWALK WITHIN THE RAMP.

③ 1/2" EXPANSION JOINT AT BACK OF CURB LINE AND AT SIDEWALK LINE.

④ NO BUMP PERMITTED. SAME SLOPE AS RAMP AND NOT TO EXCEED 1" IN HEIGHT. RAMPS SHALL BE CONSTRUCTED SO THAT WATER WILL NOT ACCUMULATE ON WALKING SURFACES.

5. ALL SIDEWALK RAMPS REQUIRE DETECTABLE WARNINGS.

⑥ LANDINGS WILL PROVIDE A LEVEL AREA (LESS THAN 2% GRADE OR CROSS SLOPE) AT APPROXIMATE STREET ELEVATION. A 4 FOOT SQUARE LEVEL LANDING IS THE REQUIRED MINIMUM.



KENTUCKY  
DEPARTMENT OF HIGHWAYS

SIDEWALK  
RAMPS

APPROVED  12-07-06  
DATE